AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings of the claims in the application:

1. (Currently Amended) A system adapted to analyze a concentration of a selected gas in a gas sample, the system comprising:

a source adapted to emit radiation of a specified intensity and wavelength along an optical path such that the radiation is absorbed by the selected gas in the gas sample being analyzed;

an infrared radiation detector disposed along the optical path in optical communication with the source and adapted to detect an intensity of the emitted radiation by the source after the radiation has passed through the gas sample; ~~and~~

a sample cell adapted to be disposed between the source and infrared radiation detector, wherein the sample cell includes a gas flow passage defined that intersects the optical path, and wherein at least a portion of a wall defining the optical path includes an infrared reflective surface so as to direct rays of radiation from the source to the infrared radiation detector generally along the optical path; and

a half-ball lens or a ball lens disposed so as to receive the radiation from the source and direct rays of the radiation in a manner so as to be substantially parallel to each other.

2. (Original) The system of claim 1, wherein the interior infrared reflective surface is selected from group consisting of aluminum and gold.

3. (Original) The system of claim 1, wherein the interior infrared reflective surface comprises a high index material.

Claims 4 and 5. (Cancelled).

6. (Currently Amended) A system for analyzing the concentration of a selected gas in a gas sample, comprising:

a source adapted to emit radiation of a specified intensity and wavelength such that the radiation is absorbed by the selected gas in the gas sample being analyzed;

a half-ball lens or a ball~~high numerical aperture~~ lens disposed so as to receive radiation from the ~~emitter~~ source and direct the emitted rays in a manner to be substantially parallel to each other; and

an infrared radiation detector in optical communication with the emitter and adapted to detect an intensity of the emitted radiation by the source after the radiation has passed through the gas sample.

7. (Original) The system of claim 6, further comprising a sample cell disposed between the source and the infrared radiation detector through which the substantially parallel rays pass.

Claims 8 and 9. (Cancelled).

10. (Currently Amended) A method of analyzing a concentration of a selected gas in a gas sample comprising:

providing a sample cell comprising a sample cell body having a gas flow passage defined therethrough, a sample cell chamber defined in the sample cell body such that the sample cell chamber defines a portion of the gas flow passage and at least a portion of an optical path, wherein at least a portion of a wall of the sample cell chamber defining the optical path includes an infrared reflective material, and wherein the sample cell includes an optical aperture defined in a portion of the sample cell;

providing a half-ball lens or a ball lens disposed so as to receive radiation from a source;

emitting infrared radiation of a specified intensity and wavelength from ~~a~~ the source through the half-ball lens or ball lens and through the aperture along the optical path;

absorbing a portion of the ~~emitted~~ radiation by the selected gas in the sample cell chamber; ~~and~~

detecting an intensity of the ~~emitted infrared~~ radiation by an infrared radiation detector disposed along the optical path in optical communication with the source after the radiation has passed through the gas sample.

Claim 11. (Cancelled).

12. (Currently Amended) A method of analyzing a concentration of a selected gas in a gas sample comprising:

emitting infrared radiation of a specified intensity and wavelength from a source through the aperture along an optical path;

providing a half-ball lens or a ball ~~high numerical aperture~~ lens disposed along the optical path so as to receive radiation from the ~~emitter~~source;

passing the ~~emitted~~ radiation through the half-ball lens or a ball~~high numerical aperture~~ lens;

passing the ~~emitted~~ radiation through a gas sample after having passed through the half-ball lens or a ball~~high numerical aperture~~ lens;

absorbing a portion of the ~~emitted~~ radiation by the selected gas such a gas sample; and

detecting an intensity of the ~~emitted~~ radiation by an infrared radiation detector disposed along the optical path in optical communication with the source after the ~~emitted~~ radiation has passed through the gas sample.